

Risk, Psychiatry and the Modern Military¹

Professor Simon Wessely

Co-Director, King's Centre for Military Health Research
Institute of Psychiatry, King's College London
Weston Education Centre
Cutcombe Rd.
London SE5 9RJ
UNITED KINGDOM

s.wessely@iop.kcl.ac.uk

INTRODUCTION

We are becoming obsessed with risk. The word itself is increasing in epidemic proportions in everything from the mass media to the medical journals. Reducing risk is increasingly the purpose of public health, and indeed politics. Whenever anything is identified as a “risk”, it is inevitable that this is closely followed by calls to remove it.

But there remains one section of society whose *raison d'être* is to take risks – the Armed Forces. That is the nature of the military contract ¹. So when men (and increasingly women) go to war, it remains the case, now and then, that some do not come back, some come back physically injured, and some come back with invisible but often equally damaging injuries, the psychiatric. Just as the notion of a military operation that could ever be free of physical casualties is something devoutly to be wished for, but unlikely to be achieved, so it is with psychiatric casualties as well.

War provides an exaggerated, perhaps extreme, version of the entire range of human experiences. It is not just fear, hate and guilt, but also excitement, love, friendship and achievement ². There is no single “experience of war”, for good or ill. There are some for whom active service remains the best thing that happened to them, and for whom life afterwards became dull and monochromatic. But for many, especially those who are not part of modern, professional, volunteer militaries, war was not the best days of their lives, and when they return appear hail in body, but not in mind. It is these experiences that form the first part of this paper.

PSYCHIATRIC BREAKDOWN: ACUTE AND CHRONIC

The first of my two themes is risk and psychological breakdown – what it is, why it is so difficult to prevent, but easier to manage, and why the Armed Forces having little to fear from psychiatry.

As readers of this set of papers will know, much is already known about psychiatric breakdown in battle. If you read classic accounts of military psychiatry, you will learn much about the acute psychiatric casualties of war ³. It is based on doctrines developed largely after the Second World War (and not the First World War as some seem to think ⁴). Since 1945 modern textbooks have not much changed in their

¹ The original version of this lecture was given as the 15th Liddell Hart Lecture, given at King's College London on March 15th 2004, published in Wessely S. Risk, psychiatry and the military. *Br J Psychiatry* 2005; 186: 459-466 and now revised and updated for this publication.

Wessely, S. (2006) Risk, Psychiatry and the Modern Military. In *Human Dimensions in Military Operations – Military Leaders' Strategies for Addressing Stress and Psychological Support* (pp. KN2-1 – KN2-16). Meeting Proceedings RTO-MP-HFM-134, Keynote 2. Neuilly-sur-Seine, France: RTO. Available from: <http://www.rto.nato.int/abstracts.asp>.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 01 APR 2006		2. REPORT TYPE N/A		3. DATES COVERED -	
4. TITLE AND SUBTITLE Risk, Psychiatry and the Modern Military				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Kings Centre for Military Health Research Institute of Psychiatry, Kings College London Weston Education Centre Cutcombe Rd. London SE5 9RJ UNITED KINGDOM				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited					
13. SUPPLEMENTARY NOTES See also ADM001955.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 16	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

descriptions of the acute breakdowns, the combat stress reactions or the soldier frozen with fear. Careful statistical inquiries in World War 2 related this to the intensity of fighting - the greater the number of physical casualties, the greater the number of psychiatric casualties ⁵. Since then it is true to say that our basic understanding of the immediate psychiatric consequences of combat has not changed much over the past half century ⁶.

Acute psychiatric breakdowns refers to the short term consequences, but what about the long term? Once again, acceptance of the long term psychiatric costs of war is nothing new. The hundred of thousands of pensions paid under the labels of shell shock, effort syndrome, war neurosis and neurasthenia meant that the long term consequences could hardly be denied by generations even before the advent of "PTSD" ⁷. It was the fact that both the USA and the UK began the Second World War with asylums still full of ex service men, and a staggering pensions bill left over from the Great War, that they were determined to do things better that time around ⁸.

So despite the occasional contemporary view of the inexorable forward march of psychiatric knowledge, there is probably little we can teach now the medical officers of the Second World War that they did not already know about the short term consequences of battle.

But something has changed. Let us imagine for a moment what the medical authorities of the two World Wars might have predicted in the way of psychiatric casualties after recent operations of the UK Armed Forces. Nowadays our modern, professional, volunteer military could never sustain anything remotely like the high intensity, prolonged attritional campaigns such as the Western Front, the Pacific War, or the Strategic Air Offensive. And we can be thankful for that. Instead we can be confident that based on their knowledge of psychiatric casualties in either World War, the doctors of the Great War or the Second World War would not have anticipated too much in the way of classic psychiatric casualties during most recent deployments. And if we look at the pattern of psychiatric problems that developed during the 2003 invasion of Iraq they would have been right ⁹ – classic combat stress reactions were uncommon.

Furthermore, based on their own observations, confirmed by later careful long term follow up studies of war veterans from the United States and Israel, they would have predicted that those who stayed well in the short term were likely to stay well in the long term as well ^{10 11}. The best predictor of long term ill health was acute ill health during conflict. Even then most would get better over time, leaving a minority with long term mental health problems.

However, these assumptions would only have been half correct. Evidence from the Falklands, Gulf War and the opening phase of the Iraq war suggest that classic psychiatric casualties – combat stress reactions as we now call them - have indeed been relatively few, and have created little in the way of operational difficulties.

But it is the apparent long term consequences of recent operations that would have been both a surprise and a puzzle to our predecessors.

Let us take the war in Iraq as an example. Acute psychiatric casualties seem to have been relatively few, yet only a few weeks after the end of the first phase of the war, American newspapers were making predictions that up to 25% of their personnel in Iraq would become victims of PTSD. And sadly subsequent careful work has largely confirmed this gloomy prediction ¹². What is more, the same research group have also shown that not only are rates of psychiatric disorders disturbingly high in personnel returning from Iraq, these rates continue to increase over time, which is in contrast to what classic theory would have predicted.

What has changed is the expected link between short and long term outcomes. It no longer seems to be the case that the level of short term acute psychiatric casualties is a good guide to long term consequences.

And at the heart of this change has been a fundamental shift in contemporary formulations of why some people do not seem to recover from the acute psychiatric injuries of war.

For the first half of the Twentieth century it was assumed that if you broke down in battle, and the cause was indeed the stress of war, then your illness would be short lived. And if it wasn't, then the cause of your ill health was not really the war at all, but events before you went to war. As the risk of over simplification, if you belonged to the dominant school of psychiatric thinking from the latter half of the 19th century to the latter half of the 20th, then the reason was hereditary. This could be expressed in terms of degeneration, which gave way to genetic concepts, but it was your constitutional inheritance that determined most psychiatric disorders other than the transient. In apparent contrast Freud and his followers said that the cause was your parents and the way they treated you in your first few months and years .

But either way it was much the same – your cards were marked, and well marked, long before you joined the Services. In war eventually every man had his breaking point , but if you broke down and never recovered, then the real cause was not the war, but either your genetic inheritance, or your upbringing. The war was merely the trigger. This general view held good for the first half of the century, until it was fundamentally challenged by the Vietnam War ⁴.

VIETNAM AND THE COMING OF POST TRAUMATIC STRESS DISORDER

It is hard for us, knowing what we do now, to appreciate that for a short time the Vietnam War was regarded as a psychiatric success story. As Albert Glass, the most influential US military psychiatrist of the post-1945 period, wrote 'according to authoritative reports, military psychiatry in the Vietnam conflict achieved its most impressive record in conserving the fighting strength'. ¹³ Psychiatric casualties were 'surprisingly low'. Casualties were, reported another psychiatrist, ten times lower than in the Second World War, and three times lower than in Korea, or lower than 'any recorded in previous conflicts' said a third ^{14 15}. Likewise, the implementation of forward psychiatry created the 'impression that psychiatric casualties were rarely produced by the unique nature of combat in Vietnam' ¹³, whilst 'psychiatric casualties need never again become a major cause of attrition in the United States military in a combat zone' ¹⁴².

However, as the war drew to its unsatisfactory (for the US at least) close, and the veterans started to come home, the picture changed. By the 1970s the Vietnam veteran came increasingly to be seen as a major social problem - alienated, abandoned, disturbed by nightmares of atrocities seen and committed, out of control, violent, suicidal, a social time bomb. And so in 1980 to explain this phenomenon psychiatrists introduced a new condition into the psychiatric lexicon – the diagnosis of post traumatic stress disorder (PTSD).

So what was new about PTSD? That war could lead to lots of psychiatric ill soldiers was not news. But the existing doctrines said confidently that should not have happened after Vietnam, since standard teaching linked the numbers of acute with the numbers of chronic psychiatric casualties. If you ended the war mentally unscathed, then you were likely to stay that way.

Secondly, doctrine taught that if you did develop long term psychiatric disorder, then the war was only the trigger, not the real cause. But the formulators of PTSD did not accept that. They believed, for honourable

² It is possible, as Ben Shephard argues, that these accounts were self serving. There is also evidence that substance abuse and behavioural problems were rife even in the early days of the conflict ¹⁶. De Groot G. A Noble Cause? America and the Vietnam War. Harlow: Longman's, 2000., but nevertheless, standard psychiatric doctrine would have predicted that these problems were not on the scale seen in previous wars, and should not have given rise to what was reported by Lifton, Shatan and others.

reasons, that the war was unquestionably to blame. It was an insane, unpopular and unjust conflict, and the US Vietnam veterans were as much its victims as the Vietnamese civilians.

The cause of PTSD was the “T”, the trauma. And both the attraction, and the danger was in its simplicity – here at last was a psychiatric disorder with a simple cause – adult trauma. We could dispense with all the difficult business of hereditary, upbringing and so on, and concentrate on the matter in hand – the experience of Vietnam.

In fact it was too simple, and many soon realised that one’s predisposition, the bag and baggage that one brought with one to military service, continued to play an important role. Nevertheless, it would still take many years before people began to accept that a major cause of the Vietnam veteran problem lay not solely in the jungles of Vietnam, but also in the social climate of an America that was turning against the war in particular, and the military in general ^{17 18}. Indeed, one of the reasons for the modest, to put it kindly, successes of the vast and costly programme of psychological treatments for Vietnam veterans may have been because it was rooted too much in the jungles of Vietnam, and paid too little attention either to contemporary America culture or the possible negative incentives inherent in the government’s response ^{8 19}.

THE RISE OF THE CULTURE OF TRAUMA

But, and here I am going to take a British perspective, is the British military really now facing an epidemic of PTSD? The answer is probably not.

First, PTSD is not the main mental health problem facing the armed forces – instead depression and alcohol are more common ²⁰. Second, even after active deployments, rates of PTSD are not substantial. Our studies, for example, showed a three fold increase in the rate of PTSD in sick veterans of the 1991 Gulf War, but only from 1 to 3% ²¹. This is a significant increase, but it remains the case that 97% of the unwell group did not fulfil criteria for PTSD.

And finally, turning to the war in Iraq, the results of our study of over 10,000 personnel, about half of whom had served in Iraq, we failed to find any increase in the rate of PTSD in UK regular forces who had taken part in what we call “Operational TELIC”, the British equivalent of Operation Iraqi Freedom. We did find a doubling of the rate of psychiatric ill health in members of the reserve forces, from 3% to 6%, but this suggests that whilst the relative risk was doubled, the attributable risk was not substantial ²².

Yet even if there has been no real epidemic of PTSD in the British Armed Forces, reading the media might suggest otherwise, and there has certainly been an epidemic of stories about PTSD. The Vietnam veteran story did play a significant part in one established fact – the reawakening of interest in trauma and its psychological consequences across Western society. But Vietnam was not the only reason for this. As social commentators never tire of telling us, the 1960s was marked by major shifts in social values.

One of the key changes relevant to our story is the shift from the community or group values that had shaped the war years to a society that increasingly valued the individual over the group. Views as to how one should emotionally deal with adversity also changed - from a belief in the importance of reticence, and emotional restraint, to one that encouraged emotional expression.

There is no simple right or wrong answer as to how we should manage our emotions. Emotional responses like everything else are subject to fashion. And fashions can change. So during the 1960s and beyond stiff upper lip was satirised by *Beyond the Fringe* and *Monty Python*, whilst emotional expression was encouraged and rewarded, until we reach the *reductio ad absurdum* of Jerry Springer and the talk show culture *Talking about yourself*, and the bad things that may have happened to you, is now the fashion ²³.

Some have claimed that trauma and its consequences have become more common because of the changing nature of modern life, but this seems unlikely. What has happened has been a widening of the boundaries of psychiatric injury. In its initial formulation PTSD could only be diagnosed after situations that were genuinely threatening to life and limb, but with every further iteration of the diagnostic criteria, this has been broadened to include situations where people felt that they were in peril, even if they were not, and, finally, to any adverse experience, which can include viewing the events of 9/11 on television, receiving a medical diagnosis, or normal experiences such as childbirth.

PTSD has become a short hand for all distress, and as it has moved from its initial rigorous formulation in the military context into the civilian sector it has become inflated. We may not face an epidemic of PTSD, but we have experienced an epidemic of stories about it. In consequence we all have our favourite “stupid stress stories”, reported with glee by the right wing media. Recent press stories in the UK have included damages for post traumatic stress being received for the trauma of receiving a strippogram, spilling tea, watching a stranger have an epileptic fit in the street, or owning a “mentally stressed” race horse.

These stories can be amusing, but are also harmful, because they devalue the real narratives of PTSD such as that experienced by Falklands veteran Simon Weston, seriously disfigured in the bombing of HMS Galahad, and who has movingly described his struggles to come to terms with not just his physical disability, but his psychological scars as well. Hence these silly “I tripped over a paving stone and am now suing for PTSD” stories inadvertently trivialise the genuine stories of psychiatric distress and disorder. The inflation of PTSD has led to its increased acceptance by society, but as Chancellors of the Exchequer and Ministers of Finance are always telling us, inflation leads to devaluation.

PTSD AND THE MYTHS OF PREVENTION: I – THE SEDUCTIONS OF SCREENING

Even if it is not as common as some believe PTSD, like all psychiatric disorders, is bad news if you develop it. And because it seems so obvious that prevention is better than cure, the cry for better prevention has gone up after every conflict of the last century.

Perhaps the most appealing strategy involves screening those at risk before they are exposed to adversity. If we could know who was going to breakdown in battle, we could screen them out beforehand. This would give us a stronger military, and be better for the men themselves, their families, and the Chancellor.

The historical record is indeed full of pleas made by those having to command men in battle to those responsible for selection imploring them to do a better job ²⁴. My favourite is quoted in Ben Shephard’s classic account of psychiatrists at war ⁸, and is a signal sent by an senior officer in the 8th Army in Egypt in 1942 back to the War Office begging them not to send him men who “can’t stand the brothels of Cairo, let alone the Afrika Corp”.

One answer seems to be mass psychological screening. One of the conclusions reached by the numerous committees of inquiry established to explain the epidemic of “shell shock” that had threatened to overwhelm the armies of 1917 and 1918 was that key lay in better selection. Psychiatrists in many of the combatant countries were keen to claim that they could now identify those who were going to make bad soldiers and future psychiatric cases. So, for example, in 1942 the Americans embarked on a mass psychiatric screening programme, led by Harry Stack Sullivan, one of the most famous psychiatrists of the mid twentieth century, and intended to remove all those vulnerable to psychiatric breakdown from military service before they could hear a shot fired in anger. The psychiatrists gave their all for the war effort, removing over two million men from the draft on the basis of personality testing that predicted future break down ²⁴.

However, the Americans nearly lost the war in consequence. By 1944, when no less a person than George C Marshall called a halt, they were running out of men ²⁵. What then happened was that many of those rejected on psychiatric grounds were reenlisted – a vast natural experiment. To everyone's surprise studies showed that most made perfectly good soldiers. Some broke down, more than those who had not been screened out – the psychiatrists were not totally wrong, but up to 85% made perfectly adequate soldiers ²⁶. It may also come as a surprise to learn that psychiatric casualties in World War 2 were no lower than in World War 1, and indeed some sources claim the opposite. The quality of the statistics means it is hard to be sure, but what we can say for certain was that screening before military service had not solved the problem.

There were many reasons why screening for psychological vulnerability to breakdown before deployment failed then, reasons which remain fundamentally unchanged to the present day. A major risk factor for breakdown is experiencing a traumatic event – but that hasn't happened yet, and may not, so pre deployment screening is deprived of the best single predictive factor. And what remains are a collection of risk factors, which whilst statistically significant, are all relatively weak individual predictors of future breakdown ²⁷.

Furthermore, excluding people who have those risk factors – coming from a single parent family, having a family history of psychiatric disorder, a poor school record and so on, would have many untoward consequences. Denying military service to people with these risky backgrounds, for example, would clearly have a serious effect on recruitment, especially for the Army, which traditionally recruits from areas of social disadvantage. It would also deny some of the social goals and benefits of military service – giving people from disadvantaged backgrounds a chance to learn a skill, and gain self respect.

Labelling people as potentially psychologically unstable, before anything has happened to prove that correct, is also not without risks. It changes peoples' views of themselves in unpredictable ways, and exposes them to stigma. The American experience showed that some denied the opportunity to serve their country because of concerns for their psychological stability returned to their home communities and were exposed to shame and ridicule.

At present both the British and Americans continue to resist the calls that continue to be made for psychological screening before deployment as a way of reducing psychological morbidity after operations. And in my opinion they are right to do so. We had collected mental health data on nearly 3,000 members of the UK Armed Forces shortly before preparations began for the Iraq War. This was part of a study on mental health screening, but the data remained confidential to the researchers, and the military remained ignorant of the results of the screening. Nearly half of those people subsequently deployed to the war, and we then followed them up using exactly the same methodology as in our main studies of the health impact of the war. We were thus able to model how effective psychiatric screening before Iraq would have been in predicting subsequent breakdown. Not surprisingly, the answer was hardly at all ²⁸.

PTSD AND THE MYTHS OF PREVENTION: II – THE DISAPPOINTMENTS OF DEBRIEFING

If screening does not work, there is still much that can be done to reduce the risk of psychiatric breakdown before people go into battle. Men fight for their friends, and the best protectors against breakdown in battle is group cohesion and bonding ^{29 30}. Issues such as morale, leadership, good equipment, and training are all relevant. None of this is news and little of it is much to do with psychiatry.

But what about after deployment, after people have been exposed to unpleasant sights or dangerous situations? Just as with screening, the idea that immediate psychological interventions could prevent later breakdown sounds intuitively appealing, and has had numerous supporters over the years. However, just

as the negative experiences of psychological screening during the Second World War should give us pause for thought, we have the example of psychological debriefing to provide us with another cautionary tale.

Most people will be familiar with the concept of single session psychological debriefing. This is an intervention led by a mental health professional carried out with people, either individually or in groups, shortly after they have been exposed to some form of adversity. The procedure involves some element of telling the story of the event, asking how people felt emotionally during the event and now, and teaching about likely further emotional reactions over time. Its purpose, enthusiastically proclaimed by its protagonists, is to prevent later psychiatric disorder such as PTSD.

In our contemporary culture, the arrival of what the media inevitably call “trained counsellors”, has become as much a part of the theatre of disaster as that of the emergency services. It has become part of the social recognition of disaster, and our collective desire that “something must be done”³¹. But the problem is that to date research has failed to show any benefit from single session psychological debriefing³², and indeed there is evidence that it may increase the risk of subsequent psychological disorder³³. There are many reasons for the ineffectiveness and possible adverse effects of debriefing. I favour the view that it impedes the normal ways in which we deal with adversity – talking to our friends, family, GP, the padre and so on, and instead professionalises distress.

So to conclude about psychiatric injury and risk -the only certain way of preventing PTSD and psychiatric injury is by not sending men to war. All else is speculative, uncertain, or even erroneous. But when people do develop psychiatric disorders, however, we can and should do better. What I have also shown is that contrary to the views in some quarters, it is wrong to say that the military know nothing and do nothing about psychiatric injury. The military have an enviable record for innovation in psychiatry – it was military psychiatry that initiated group psychotherapy³⁴. Likewise, modern community care and assertive outreach began with the military doctrine of proximity, immediacy and expectancy (PIE) that is the standard management of combat stress, and gave the intellectual stimulus to crisis intervention³⁵. Psychiatric injury and its management is not new territory for the Armed Forces. It poses certain problems, but these are neither unfamiliar, unpredictable, nor beyond understanding or comprehension.

THE SYNDROMES ARE COMING

If psychiatric injury is, to coin a phrase, nothing to be afraid of, the same is not true of my next examples. This is the area of risk that really does at times appear inexplicable and baffling. It is the world of unexplained symptoms and syndromes, exemplified in the military context by the story of the so called “Gulf War Syndrome”^{36 3}.

Sometime after the end of hostilities in the 1991 Gulf War reports started to emerge in the United States, and subsequently the United Kingdom, of servicemen and women coming forward with inexplicable health complaints. These did not constitute any recognised condition in medical science, but were instead a collection of diverse symptoms such as overwhelming fatigue, concentration difficulties, generalised pain and malaise, problems with memory and many others. At the same time Gulf Veterans who had fathered children with congenital handicaps also blamed this on their military service. Numerous causes were advanced in the media, ranging from smoke from oil fires, use of pesticides, exposure to depleted uranium, new infections, reactions to the vaccination programmes used to protect against biological warfare, medications given to protect against chemical warfare, and even exposure to nerve agents themselves.

³ The term “Gulf War Syndrome” is strictly speaking a misnomer, since there is no compelling evidence of a constellation of signs or symptoms uniquely associated with Gulf service. The correct term should be “Gulf War Illness” or “Gulf War Illnesses”, but it is “Gulf War Syndrome” that has entered the lexicon, and indeed has been belatedly recognised by the UK Ministry of Defence as a portmanteau term

This is not the place to analyse the growing literature on Gulf War illness (see ^{37 38}). However, it is fair to say that no single cause, and no pathological process, has been found to explain the problem, and problem it undoubtedly is. Up to 20% of the UK Armed Forces who deployed to the Gulf have increased health complaints, and similar numbers believe themselves victim of this mysterious syndrome ^{39 40}. Much the same can be said for the US and Australian experiences.

“Gulf War Syndrome” is not, however, a problem unique to the military. Its symptoms overlaps with numerous other similar syndromes, such as multiple chemical sensitivity, dental amalgam syndrome, RSI, total allergy syndrome, sick building syndrome and many others. Many of these are likewise blamed on possible environmental hazards, difficult to assess or quantify, such as low level radiation, chemicals, food additives, pesticides, pollution and the like ⁴¹. It is these associations with controversial and unwelcome features of our environment and technology that have led to the proposal that these syndromes should be labelled “illnesses of modernity” ⁴².

RISKS: PERCEPTIONS AND PARADOXES

These new syndromes make a little more sense if we consider the question of contemporary health concerns, and the explanations that people give for illness.

The health concerns of the public are not the same as the health concerns of doctors and scientists. Whilst we as good doctors try hard to convince people not to smoke, to drink less, drive more slowly and eat more vegetables – it is an uphill struggle. Public health physicians plod on, because they know these are the real risks to health and survival. Sadly the public remain fairly unwilling to do much about it, and rather unconcerned when all is said and done.

None of this is surprising, because the public does not rate risks in the same statistical way scientists do. For a scientist something that kills 100 people is twice as risky as something that kills 50 people a year. It is twice as dangerous, twice as bad. This is simple, statistical, and almost completely misses the point.

The public judge risk by other criteria, in which statistics play a relatively small role. For example, did I accept the risk voluntarily, when I chose to smoke or drive too fast, or was it outside of my control? Invisible risks – viruses, chemicals, radiation, are more scary than visible ones, and associated with particular dread. Unnatural risks rate higher than natural – far more people have died in the UK let alone the world from floods, but nevertheless, more column inches and campaign hours are devoted to the threat from nuclear power stations, yet to cause a single death in this country.

People are also more prepared to accept risks if they also perceive some individual benefit to themselves from that risk. The UK government has been unable to persuade us that GM foods pose any benefit to our society (as opposed to developing countries). In contrast, despite all the media attempts to generate mobile phone scares, people still accept this risk (if there is one) because the benefits are so obvious. Hence we have the strange situation of our expert committee concluding that although there was no evidence that mobile phones were a health hazard, they recommended restricting use by children “as a precaution”. As anyone with adolescent children will know, never was government advice so openly ignored.

People worry about risks because of factors other than statistics. It is not smoking, obesity, poor diet, speeding and lack of exercise that are associated with popular concerns and outrage. It is issues such as landfill sites, chemicals, food additives, silicon breast implants, dental amalgam, low level radiation, MMR and so on. These are the risks, some of them more virtual than real, that get the media excited, the public worried and the politicians perplexed.

All of this matters. People’s appraisals of risks, their concerns, directly affect health as well. We know that the greater the degree of worry shown by a person about the potential effects of, for example, living near a

landfill site, the greater the number of symptoms⁴³. There is also elegant evidence from a prospective New Zealand study led by psychologist Keith Petrie⁴⁴. He had advance warning of a plan to eliminate a particular pest, the painted apple moth, by spraying some Auckland suburbs with pesticide. Before this could take place, he asked a large sample of residents about their particular concerns about health and the environment. The spraying then took place, and he repeated the study, looking at how people had been affected by the spray.

What he found was that the more people registered concerns about, for example, GM food, mobile phone masts or food additives, before the spray, the more they reported symptoms afterwards. They even reported more health problems in their pets. So what we think of our environment, and the explanations we give for our symptoms, matter, and impact on how we will react when exposed to these agents.

Remember, if the effects of the pesticides were solely toxicological, then beliefs should not make a difference. Once you have taken the decision to smoke, your risk of developing cancer is unaffected by views on the link between smoking and cancer, nor that your uncle Albert smoked 60 day and still got a telegram from the Queen.

None of this is surprising. Much of the public share concerns about the quality of our food, water and air. Many support the efforts of organisations, especially NGOs, to improve our environment. Many share the views of the same NGOs about the links between our environment and health.

But taken overall, and in historical context, it seems baffling, and paradoxical. We now live longer, and we are healthier than at any other period of human history. Our environment, be it the air we breathe, the food we eat or the water we drink, has little relationship to that of a hundred years ago, testament to a century of extraordinary successes in public health. And yet this is not reflected in self rated health. We complain of more symptoms, spend more days in bed, and rate our health worse than we did 40 or even 80 years ago^{45 46}. This has been aptly described as the paradox of health⁴⁷.

Our current concerns with the quality of our food or water seem to have become disconnected from the real advances that have been made. Some idealists look back nostalgically to a period when our food was “natural”, and free from contamination, before the rise of the food industry and mass farming. But any reading of classic descriptions of working class life in London or industrial Salford in the 19th century would serve as an antidote to over romantic readings of history. Back then our food, air and water really was toxic. Victorian food was grossly contaminated - strychnine in rum, copper sulphate in pickles and preserves, lead in mustard, ferrous sulphate in tea and beer, lead and mercury in sugar and chocolate.

So the undeniable changes in all objective indices of health do not seem to have been mirrored in a collective increase in subjective health and well being –if anything the opposite has occurred. Likewise, the increased tempo of regulation exemplified by the “Precautionary Principle” has not been reflected in increased public well being, confidence or reassurance. Instead disproportionate regulation, coupled with a media that seems to thrive on a diet of health scare stories, leads to the danger that we are worrying ourselves sick.

THE MILITARY: ACCEPTABLE AND NON ACCEPTABLE RISKS

Turning to the military, readers of these papers will not need to be convinced that the military do accept certain risks and hazards for which they see a purpose –serving members of the Armed Forces usually make it clear that they accept the risks of war that go with the job, and hence the chance of physical and even psychological injury.

Like civilians, the military seem accepting of other risks over which they feel they have a choice – such as driving or sports injuries, a perennial cause of serious injury and manpower difficulties. These type of

risks are clear, and associated with a greater burden of morbidity and mortality than any of the hazards that have been linked with, for example, Gulf War Syndrome, yet it is the latter that dominate the column inches.

I suggest several possible reasons for this. First, these risks are similar to those that are already known from the civilian literature to score high on the measures of risk perception already considered. Second, these apparently new risks are not seen as part of the traditional military contract. Finally, we cannot ignore the growing problem of mistrust of all institutions, but particularly those with military connections.

The first reason that might help understand the emergence of “Gulf War Syndrome” is the links between the potential hazards blamed for “Gulf War Syndrome” and the health concerns of non military populations. Concerns about the effect of smoke from the oil fires burning in Kuwait, even though these have not been substantiated, may relate to civilian concerns about air pollution and quality. Concerns about the use of organophosphate insecticides during the Gulf Campaign have direct civilian counterparts, back to Rachel Carson’s seminal book “Silent Spring” and the beginnings of the ecology movement. Given the continuing crisis over MMR, one does not need to labour the overlap between civilian and military concerns about vaccination.

Another source of anxiety and column inches is the use of Depleted Uranium (DU) munitions. The main hazard of exposure (assuming that one survives the actual impact) comes not from its modest radioactive properties but because it is a heavy metal. The risks from DU fragments are closer to those from lead, rather than plutonium ⁴⁸. Instead, the reason for its high public and media may come not from its properties as a heavy metal, but its lexical links to radiation, conjuring up images of Hiroshima and Chernobyl, and thus scoring as high as one can get on measures of risk perception.

There is a second reason why the military find these hazards so problematic. These “toxic” risks are not what servicemen and women sign up for. And it is worse if these risks appear to be self inflicted – hence the anxiety and distrust over the use of medical countermeasures such as pyridostigmine or biowarfare vaccinations, or alternatively from the side effects of our use of DU munitions. These are the medical equivalents of “friendly fire” ^{49 50}, itself an emotive issue with great resonance for the Armed Forces.

Finally all of these narratives take place in a society that has become less accepting of authority or expertise, and less deferential. The legacy of episodes perceived to be examples of official denial or less than full disclosure, such as Agent Orange or the side effects of nuclear test programmes in the 1950s, means that the public and the rank and file of the Armed Forces are less likely to accept official reassurance, and more likely to believe information from the Internet, irrespective of its scientific merit. This general lost of trust in institutions amplifies risk concerns and risk awareness across society ⁵¹.

RISKS: PROPORTIONAL AND NON PROPORTIONAL

The military have little to be afraid of from acknowledging the reality of psychiatric injury, and the increasing importance been accorded to the subject of this symposium suggests that this is indeed happening. Understanding stress and breakdown, and accepting it more sympathetically, poses no danger to the military, provided (and it is a big proviso) it is managed within the context of military culture, and that the military do not fall into the trap of believing that stress can be avoided or prevented, as opposed to managed. The UK Ministry of Defence fought and won the massive PTSD legal case on the basis that it is utopian to believe that stress can ever be eliminated from a military organisation ⁵². Indeed, this is undesirable. The military deliberate stretch and test people because war is a stressful business, and it is best to come prepared.

However, things are not perfect, and one thing the armed forces can do better is to promote a climate in which people will come forward and declare they are having problems – as we all know stigma remains a

serious issue. The current initiative launched within the Royal Marines to encourage peer group support (“TRIM”) might play a role here ⁵³, provided we remember the cautionary tale of debriefing. No matter how intuitively appealing an intervention seems, there is no substitute for sound evidence of efficacy.

I believe that none of this will weaken the fundamental purpose of the armed forces, of fighting and winning wars. However, what the military should be worried about, and what may reduce their operational effectiveness, is the wider risk averse culture that is now so entrenched in the civilian world. We have as a society become too risk averse, terrified of our shadows, able to contemplate a measles epidemic that will kill children because of fears of a vaccine that doesn’t. If the Armed Forces embrace a similar risk averse culture, fuelled by rumour and anecdote, then the consequences could be as severe.

This is because there are fundamental differences between the psychiatric and non psychiatric risks that I have been considering. Psychiatric injuries are proportionate to risk, since there is some relationship between exposure and outcome. Furthermore, we have a reasonable if not perfect understanding of why psychiatric injury occurs, and some idea of what to do when it does. But our new “modern” risks, which I have detailed in the second half of this paper, are more difficult. There are few simple links between exposure and outcome, the mechanisms involved are either obscure or occasionally non existent, and we have little idea of what to do about them. Indeed, because we do not understand these new risks, our approach tends to be based on precaution, which may only further increase our anxieties ⁵⁴.

FROM RISK AVERSION TO RESILIENCE

But is this unstoppable? Not necessarily. First, sometimes history does not repeat itself, and indeed surprises us. I am referring again to the saga of “Gulf War Syndrome” which I mentioned earlier. When it became clear that coalition forces led by the United States were going to invade Iraq in the spring of 2003, in the UK there was some thought given to how to prevent a repeat of the “Gulf War Syndrome” episode. Various measures were taken, and one of them was to ask the current author and his team to undertake a large prospective study of the health of the UK forces. I have already sketched the main results of that study concerning mental health outcomes ²². At the same time we also looked for evidence of a new “Iraq War Syndrome”. We did not find any, at least not yet ⁵⁵. And this author has to admit been surprised, and still unable to fully explain, this finding.

Second, there are also times when history does not surprise us, or at least should not surprise us. The historical record gives numerous examples of occasions and situations where people demonstrated that they are not intrinsically risk averse - provided that they are given reasons why they should accept the risk. The record of populations under extreme stress provides numerous examples of resilience in the face of adversity. Our own work on psychological reactions to the London Blitz and the absence of widespread public panic confirms one well known example ⁵⁶, Thomas Glass’ appraisal of the September 11th 2001 evacuation of the World Trade Centre in New York is another ⁵⁷, and the 2005 London bombings provided yet another example that ordinary citizens are more capable of managing adversity that we sometimes give them credit ^{58 59}. It seems clear that people can behave with great resilience, even heroism, in circumstances when experts before hand had predicted mass panic and civil breakdown. One reason may be that people can see a wider purpose to accepting these risks, and also became active participants in the process. During the war years the vast majority of the public had some voluntary participation in the war effort in one shape or form ⁵⁶.

In contrast, if all the authorities can offer is safety for its own sake, in which the only purpose of risk management is to reduce risk, then such measures not only fail, but may generate not greater reassurance, but greater anxiety. Maintaining population resilience is not simply a matter of reducing risk. Safety first is not enough. People need to know that there is a wider purpose to accepting risk. Public health measures that are based solely on fear, on alarming the public, rarely work, and even if they remove one source of anxiety, seem merely store up trouble for the next.

The challenge is to find a positive agenda of engagement that is based on more than simply reducing risk. The goal of a risk free society, let alone a risk free Armed Forces, is unachievable, and probably unpalatable. Perhaps in talking to a military audience I am preaching to converted – I hope so - but at present the main purpose of government policy, at least in my country, seems to be based on the concepts of precaution and risk avoidance. “Better safe than sorry” seems to be the watchword, but there is a danger that we will end up no safer, and a lot sorrier.

REFERENCES

1. Dandeker C. On the Need to be Different: Military Uniqueness and Civil-Military Relations in Modern Society. *RUSI Journal* 2001;**146**:4-9.
2. Bourke J. *An Intimate History of Killing*. London: Granta, 1999.
3. Belenky GL. Varieties of reaction and adaptation to combat experience. *Bulletin of the Menninger Clinic*. 1987;**51**(1):64-79.
4. Wessely S. Twentieth Century Perspectives on Combat Motivation and Breakdown. *Journal of Contemporary History* 2006;**41**:268-286.
5. Jones E, Wessely S. Psychiatric Casualties of War: An Inter and Intra War Comparison. *British Journal of Psychiatry* 2001;**178**:242-247.
6. Belenky GL, Noy S, Solomon Z. Battle Stress. *Military Review* 1985:29-37.
7. Jones E, Palmer I, Wessely S. War Pensions (1917-1945): a barometer of health beliefs and psychological understanding. *British Journal of Psychiatry* 2002;**180**: 374-379.
8. Shephard B. *A War of Nerves, Soldiers and Psychiatrists 1914-1994*. London: Jonathan Cape, 2000.
9. Turner M, Kiernan M, McKechnie A, Neal L. Acute military psychiatric casualties from the war in Iraq. *British Journal of Psychiatry* 2005;**186**:476-479.
10. Solomon Z. A 3-year prospective study of post-traumatic stress disorder in Israeli combat veterans. *Journal of Traumatic Stress* 1989;**2**(1):59-73.
11. Lee K, Vaillant G, Torrey W, Elder G. A 50-year Prospective Study of the Psychological Sequelae of World War II Combat. *American Journal of Psychiatry* 1995;**152**:516-522.
12. Hoge C, Castro, C.,Messer, C.,McGurk, D.,Cotting, D.,Koffman, R. Combat Duty in Iraq and Afganistan, Mental Health Problems, and Barriers to Care. *New England Journal of Medicine* 2004;**351**:13-22.
13. Glass A. Mental Health Programs in the Armed Forces. In: Caplan G, ed. *American Handbook of Psychiatry*. 2nd Edition ed. New York: Basic Books, 1974: 800-809.
14. Bourne P. Military psychiatry and the Vietnam experience. *American Journal of Psychiatry* 1970;**127**:481-488.
15. Bey W. Division psychiatry in Vietnam. *American Journal of Psychiatry* 1970;**127**:146-150.
16. De Groot G. *A Noble Cause? America and the Vietnam War*. Harlow: Longman's, 2000.

17. Scott J. *The Politics of Readjustment: Vietnam Veterans Since the War*. New York: De Gruyter, 1993.
18. Wessely S, Jones E. Psychiatry and the Lessons of Vietnam: What were they and are they still relevant? *War and Society* 2004;**22**:89-103.
19. Johnson A. Long term course of treatment-seeking Vietnam veterans with posttraumatic stress disorder: mortality, clinical condition, and life satisfaction. *Journal of Nervous and Mental Disease* 2004;**192**:35-41.
20. Jones M, Rona R, Hooper R, Wessely S. The burden of psychological illness in the British Armed Forces before the Iraq war. *Occupational and Environmental Medicine* 2006;**in press**.
21. Ismail K, Kent K, Brugha T, et al. The mental health of UK Gulf war veterans: phase 2 of a two-phase cohort study. *British Medical Journal* 2002;**325**:576-579.
22. Hotopf M, Hull L, Fear N, Browne T, Horn O, Iversen A, Jones M, Murphy D, Bland D, Earnshaw M, Greenberg N, Hacker-Hughes J, Tate R, Dandeker C, Rona R, Wessely S. The health of UK military personnel who deployed to the 2003 Iraq War. *Lancet* 2006;**367**:1731-1741.
23. Furedi F. *Therapy Culture: Cultivating Vulnerability In An Anxious Age*: Routledge, 2003.
24. Jones E, Hyams K, Wessely S. Screening for Vulnerability to Psychological Disorders in the Military: An Historical inquiry. *Journal of Medical Screening* 2003;**10**:40-46.
25. Ginzberg E. *The Lost Divisions*. New York: Columbia University Press, 1959.
26. Aita J. Efficacy of brief clinical interview method in predicting adjustment: 5 year follow-up study of 304 Army inductees. *Archives of Neurology and Psychiatry* 1949;**61**:170-178.
27. Brewin C, Andrews B, Valentine J. Meta-analysis of risk factors for posttraumatic stress disorder in trauma exposed adults. *Journal of Consulting and Clinical Psychology* 2000;**68**:748-766.
28. Rona R, Hooper R, Jones M, Hull L, Browne T, Horn O, Murphy D, Hotopf M, Wessely S. Would mental health screening of the UK Armed Forces before the Iraq War have prevented subsequent psychological morbidity? *submitted for publication* 2006.
29. Shils E, Janowitz M. Cohesion and disintegration in the Wehrmacht in World War II. *Public Opinion Quarterly* 1948;**12**:280-315.
30. Palmer I. The emotion that dare not speak its name? *British Army Review* 2003;**132**:31-37.
31. Gist R. What have they done to my song? Social science, social movements and the debriefing debates. *Cognitive and Behavioral Practice* 2002;**9**:273-279.
32. Rose S, Bisson J, Wessely S. A systematic review of brief psychological interventions ("debriefing") for the treatment of immediate trauma related symptoms and the prevention of post traumatic stress disorder. In: Oakley-Browne M, Churchill R, Gill D, Trivedi M, Wessely S, eds. *Depression, Anxiety and Neurosis Module of the Cochrane Database of Systematic Reviews*,. Issue 3 ed. Oxford: Update Software, 2004.
33. Emmerik A, Kamphuls J, Hulsbosch A, Emmelkamp P. Single session debriefing after psychological trauma: a meta analysis. *Lancet* 2002;**360**:736-741.

34. Harrison T, Clarke D. The Northfield Experiments. *British Journal of Psychiatry* 1992;**160**:698-708.
35. Artiss KL. Combat psychiatry: from history to theory. *Military Medicine* 1997;**162**(9):605-609.
36. Wessely S. Ten Years On, What do We Know About the Gulf War Syndrome? *Clinical Medicine (JRCPL)* 2001;**1**:28-37.
37. Barrett DG, Gray G.; Doebbeling, BN; Clauw, DJ; Reeves, WC. Prevalence of Symptoms and Symptom-based Conditions among Gulf War Veterans: Current Status of Research Findings. *Epidemiologic Reviews* 2003;**24**:218-227.
38. Wessely S (ed). The Health of Gulf War Veterans. *Philosophical Transactions of the Royal Society* 2006;**361**:531-731.
39. Chalder T, Hotopf M, Hull L, et al. Prevalence of Gulf war veterans who believe they have Gulf war syndrome: questionnaire study. *British Medical Journal* 2001;**323**:473-476.
40. Cherry N, Creed F, Silman A, et al. Health and exposures of United Kingdom Gulf war veterans. Part 1: The pattern and extent of ill health. *Occupational and Environmental Medicine* 2001;**58**:291-298.
41. Aceves-Avila F, Ferrari R, Ramos-Remus C. New insights into culture driven disorders. *Best Practice and Research Clinical Rheumatology* 2004;**18**:155-171.
42. Petrie K, Wessely S. Modern worries and medicine. *British Medical Journal* 2002;**324**:690-691.
43. Roht L, Vernon S, Weir F, Pier S, Sullivan P, Reed L. Community exposure to hazardous waste disposal sites: assessing reporting bias. *American Journal of Epidemiology* 1985;**122**:418-433.
44. Petrie K. Worries about Modernity Predict Symptom Complaints Following Environmental Pesticide Spraying. 2005.
45. Verbrugge L. Longer life but worsening health? Trends in health and mortality of middle aged and older persons. *Millbank Memorial Fund Quarterly* 1984;**62**:475-519.
46. Shorter E. From paralysis to fatigue: a history of psychosomatic illness in the modern era. New York: Free Press, 1992.
47. Barsky A. The paradox of health. *New England Journal of Medicine* 1988;**318**:414-418.
48. Fulco C, Liverman C, Sox H, eds. Gulf War and Health: Volume 1. Depleted Uranium, Sarin, Pyridostigmine Bromide, Vaccines. Washington DC: Institute of Medicine, 2000.
49. Kilshaw S. Friendly Fire. *Anthropology and Medicine* 2004;**11**:149-160.
50. Wessely S, Freedman L. Reflections on Gulf War Illness. *Philosophical Transactions of the Royal Society B: Biological Sciences* 2006;**361**:721-730.
51. Slovic P. Trust, emotion, sex, politics, and science: surveying the risk assessment battlefield. *Risk Analysis* 1999;**19**:689-702.
52. McGeorge T, Hacker Hughes, J., Wessely, S. The MOD PTSD Class Action - A Psychiatric Perspective. *Occupational Health Review* 2006;**in press**.

53. Jones N, Roberts P, Greenberg N. Peer-group risk assessment: a post-traumatic management strategy for hierarchical organizations. *Occupational Medicine* 2003;**53**:469-475.
54. Durodie W, Wessely S. Resilience or panic: the public's response to a terrorist attack. *Lancet* 2002;**360**:1901-1902.
55. Horn O, Hull L, Jones M, et al. Is there an "Iraq War Syndrome"? Comparison of the health of UK service personnel after the Gulf and Iraq wars. *Lancet* 2006;**367**:1742-1746.
56. Jones E, Woolven, R., Durodie, W., Wessely, S. Public panic and morale: a reassessment of civilian reactions during the Blitz and World War 2. *Journal of Social History* 2004;**17**:463-479.
57. Glass T, Schoch-Spana M. Bioterrorism and the People: how to Vaccinate a City against Panic. *Clinical Infectious Diseases* 2002;**34**:217-223.
58. Rubin J, Brewin, C., Greenberg, N., Simpson, J., Wessely, S. Psychological and behavioural reactions to the bombings in London on 7 July 2005: cross sectional survey of a representative sample of Londoners. *British Medical Journal* 2005;**311**:606-610.
59. Wessely S. Victimhood and Resilience. *New England Journal of Medicine* 2005;**353**:548-550.

